

## REMARKS

### Claim Status

Claims 1-4, 7-15, 18-25 and 29-34 are pending. Claims 1-4, 7-15, 18-25 and 29-34 are rejected.

In the Advisory Action mailed February 27, 2007, the Examiner states:

“Examiner notes that a line doubler does not necessarily discard every other field. For instance, see “<http://www.hdtvmagazine.com/glossary.php>” under the definition of 1080p. **This describes a line doubler creating a progressive 60 frame per second signal from an interlaced 30 frame per second signal.** Examiner also notes that fig. 2 shows the invention hooked up to a computer display, PAL TV, and NTSC TV. Since PAL and NTSC use different frame rates, the invention of Perlman must do some sort of frame rate conversion to ensure compatibility with these standards.” (emphasis added)

The relevant portion of the cited reference is reproduced below:

**1080p** - HDTV format of 1080 progressive visible lines of 1920 total pixels each in 16:9 aspect ratio. 1080p is per frame at either 24fps or 30 fps. 1080p/60fps is not one of the 18 ATSC formats but new displays introduced since 2005 are able to display in that format. 1080p/24fps should be ideal for the transfer and broadcast of 24 fps film-based material, but it is not used at the present broadcasting. However, should it be used, objectionable flicker would require the 1080p/24fps to be converted to either progressive 1080p/60 fps or interlaced 1080i/30fps (60 fields per second). If the signal were to be converted to the higher 1080p/60fps, it would also require a CRT based video projector with a fast raster (67.5kHz, double the 33.75kHz of 1080i/30fps) to be able to synchronize to the signal and display it as 60fps. The same (fast raster) requirement would apply if the 1080p/60fps were obtained from line doubling a 1080i/30fps broadcast program using a scaler/line doubler processor. Some fixed pixel displays released on the first generation/s of 1080p HDTVs capable of displaying 1080x1920 are not actually able to ‘accept’ a 1080p/60fps signal from an external source. In 2006, such source was introduced, Blu-ray hi-def DVD.

After careful reading of the cited reference, and in particular, that portion noted by the Examiner, the Applicants’ believe that the Examiner has mis-read the cited reference. At no point does the cited reference describe a line doubler creating a progressive 60 frame per second signal from an interlaced 30 frame per second signal. On the contrary, the reference describes using frame rate conversion to convert a 1080p/24fps (frame per second) signal to either a progressive 1080p/60 fps (an example of pure frame rate conversion) or 1080i/30 fps (60 fields per second which is 30 fps (frames per second)) which is an example of frame rate conversion (24 fps to 30 fps) and interlacing and NOT line doubling as suggested by the Examiner. In the second case, each frame of the 1080p signal is converted to 2 fields (thus the 60 fields per second) with each field including 540 lines (i.e., the total number of lines per frame remains the

same). Therefore, the Examiner by citing this reference corroborates the Applicant's previous discussion that Perlman does not teach frame rate conversion since Perlman uses a flicker filter to eliminate the "objectionable flicker" and not frame rate conversion as discussed by the reference cited by the Examiner.

With regards to the Examiner's assertion that, "Examiner also notes that fig. 2 shows the invention (of Perlman) hooked up to a computer display, PAL TV, and NTSC TV. Since PAL and NTSC use different frame rates, the invention of Perlman must do some sort of frame rate conversion to ensure compatibility with these standards". The Applicants' respectfully disagree with the Examiner's unfounded presumption that Perlman "must do some sort of frame rate conversion" since Perlman never even mentions the term "frame rate conversion" at all. The Examiner is presupposing that Perlman can take any input signal and convert it to any display device. A more cogent argument is that since Perlman never discusses frame rate conversion, that Perlman will accept only a PAL signal for a PAL display, an NTSC signal for an NTSC display and so on which is more consistent with the plain reading of Perlman than is that put forth by the Examiner.

Furthermore, the Applicants' also disagree with the Examiner's assertion with regards to displaying a progressive scan image on an interlaced display (without prior interlacing), "examiner notes that an interlaced display can only display half of its vertical resolution at a time, followed by the other half. Since an image displayed in this manner, even if distorted, is inherently divided into fields, this reads on the definition of an interlaced image". Therefore, the Examiner admits that any attempt to display a progressive scan signal on an interlaced display will result in a distorted image and is therefore results in an inoperable combination of displaying a progressive scan signal on an interlaced display that decidedly teaches away from the invention.

### **CONCLUSION**

The Applicants' believe that all pending claims are allowable in view of the remarks above. Should the Examiner believe that a further telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number set out below.

Respectfully submitted,  
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